I claim:

1. A method for the treatment of cancer comprising administering to a patient a therapeutically effective amount of a bone morphogenetic protein-2 activity inhibitor.

2. The method of claim 1 wherein the bone morphogenetic protein-2 activity inhibitor is a polypeptide that binds specifically to bone morphogenetic protein-2.

3. The method of claim 1 wherein the bone morphogenetic protein-2 activity inhibitor is a polypeptide that binds specifically to a bone morphogenetic protein-2 receptor.

4. The method of claim 3 wherein the bone morphogenetic protein-2 receptor is a bone morphogenetic protein IB receptor.

5. The method of claim 1 wherein the bone morphogenetic protein-2 activity inhibitor is selected from the group consisting of noggin, chordin, cerberus 1 homolog , and gremlin.

6. The method of claim 1 wherein the bone morphogenetic protein-2 activity inhibitor is noggin.

7. The method of claim 6 wherein the amino acid sequence of noggin is selected from the group consisting of amino acids #20-231 of SEQ ID NO: 4 and amino acids #20-231 of SEQ ID NO: 6.

8. The method of claim 1 wherein the bone morphogenetic protein-2 activity inhibitor is a polypeptide, the amino acid sequence of which comprises at least ten

consecutive amino acids of a protein selected from the group consisting of noggin, chordin, gremlin, and cerberus 1 homolog .

9. The method of claim 1 wherein the bone morphogenetic protein-2 activity inhibitor is a polypeptide the amino acid sequence of which comprises at least ten consecutive amino acids of noggin.

10. The method of claim 9 wherein the amino acid sequence of noggin is selected from the group consisting of SEQ ID NO: 4 and SEQ ID NO: 6.

11. The method of claim 1 wherein the bone morphogenetic protein-2 activity inhibitor is an antibody to bone morphogenetic protein-2.

12. The method of claim 1 wherein the bone morphogenetic protein-2 activity inhibitor is an antisense oligonucleotide that binds to a bone morphogenetic protein-2 nucleic acid sequence.

13. The method of claim 1 wherein the bone morphogenetic protein-2 activity inhibitor is an antisense oligonucleotide that binds to at least a portion of a bone morphogenetic protein-2 nucleic acid sequence.

14. The method of claim 1 wherein the cancer is a carcinoma.

15. The method of claim 14 wherein the carcinoma is selected from the group consisting of bladder cancer, breast cancer, colon cancer, kidney cancer, lung cancer, ovarian cancer, thyroid cancer, endometrial cancer, omental cancer, testicular cancer, and liver cancer.

16. The method of claim 1 wherein the cancer is lung cancer.

17. The method of claim 1 wherein the patient is a human.

18. The method of claim 1 wherein the bone morphogenetic protein-2 activity inhibitor further comprises a pharmaceutically acceptable carrier.

19. The method of claim 18 wherein the bone morphogenetic protein-2 activity inhibitor is administered orally, enterically, intravenously, peritoneally, subcutaneously, transdermally, parenterally, intratumorally, or rectally.

20. A method for the treatment of cancer comprising administering to a patient a therapeutically effective amount of an expression vector having a nucleic acid sequence encoding a bone morphogenetic protein-2 activity inhibitor.

21. The method of claim 20 wherein the expression vector further comprises a selective promoter that is operably linked to the nucleic acid sequence encoding a bone morphogenetic protein-2 activity inhibitor.

22. The method of claim 21 wherein the selective promoter is carcinoembryonic antigen (CEA) promoter.

23. The method of claim 20 wherein the bone morphogenetic protein-2 activity inhibitor is a polypeptide that specifically binds to bone morphogenetic protein-2.

24. The method of claim 20 wherein the bone morphogenetic protein-2 activity inhibitor is a polypeptide that specifically binds to a bone morphogenetic protein-2

receptor.

25. The method of claim 24 wherein the bone morphogenetic protein-2 receptor is bone morphogenetic protein IB receptor.

26. The method of claim 20 wherein the bone morphogenetic protein-2 activity inhibitor is selected from the group consisting of noggin, chordin, gremlin, and cerberus 1 homolog.

27. The method of claim 20 wherein the BMP-2 activity inhibitor is noggin.

28. The method of claim 27 wherein the amino acid sequence of noggin is selected from the group consisting of SEQ ID NO: 4 and SEQ ID NO: 6.

29. The method of claim 20, wherein the bone morphogenetic protein-2 activity inhibitor is a polypeptide the amino acid sequence of which comprises at least ten consecutive amino acids of noggin.

30. The method of claim 20, wherein the amino acid sequence of noggin is selected from the group consisting of SEQ ID NO: 4 and SEQ ID NO: 6.

31. The method of claim 20 wherein the cancer is a carcinoma.

32. The method of claim 31 wherein the carcinoma is selected from the group consisting of bladder cancer, breast cancer, colon cancer, kidney cancer, lung cancer, ovarian cancer, thyroid cancer, endometrial cancer, omental cancer, testicular cancer, and liver cancer.

33. The method of claim 20 wherein the cancer is lung cancer.

34. The method of claim 20 wherein the patient is a human.

35. The method of claim 20 wherein the expression vector further comprises a pharmaceutically acceptable carrier.

36. The method of claim 35 wherein the expression vector is administered orally, enterically, intravenously, peritoneally, subcutaneously, transdermally, parenterally, intratumorally, or rectally.

37. A method for the treatment of cancer comprising administering to a patient a therapeutically effective amount of an expression vector encoding an antisense oligonucleotide that binds to a bone morphogenetic protein-2 nucleic acid sequence.

38. The method of claim 37 wherein the expression vector further comprises a selective promoter.

39. The method of claim 38 wherein the expression vector is carcinoembryonic antigen (CEA) promoter.

40. The method of claim 37 wherein the cancer is a carcinoma.

41. The method of claim 37 wherein the carcinoma is selected from the group consisting of bladder cancer, breast cancer, colon cancer, kidney cancer, lung cancer, ovarian cancer, thyroid cancer, endometrial cancer, omental cancer, testicular cancer, and liver cancer.

42. The method of claim 41 wherein the cancer is lung cancer.

43. The method of claim 37 wherein the patient is a human.

44. The method of claim 37 wherein the expression vector further comprises a pharmaceutically acceptable carrier.

45. The method of claim 44 wherein the expression vector is administered orally, enterically, intravenously, peritoneally, subcutaneously, transdermally, parenterally, intratumorally, or rectally.

46. An article of manufacture comprising packaging material and, contained within the packaging material, a compound that is a bone morphogenetic protein-2 activity inhibitor, wherein the packaging material indicates that the compound can be used for treating cancer in a patient.

47. The article of manufacture of claim 46 wherein the cancer is a carcinoma.

48. The article of manufacture of claim 47 wherein the carcinoma is selected from the group consisting of bladder cancer, breast cancer, colon cancer, kidney cancer, lung cancer, ovarian cancer, thyroid cancer, endometrial cancer, omental cancer, testicular cancer, and liver cancer.

49. The article of manufacture of claim 46 wherein the cancer is lung cancer.

50. A method for the diagnosis of cancer in a patient, comprising

obtaining a biological sample from a patient and

measuring the level of bone morphogenetic protein-2 in the biological sample, wherein an elevated level of bone morphogenetic protein-2 indicates cancer in the patient.

51. The method of claim 50 wherein the cancer is a carcinoma.

52. The method of claim 51 wherein the carcinoma is selected from the group consisting of bladder cancer, breast cancer, colon cancer, kidney cancer, lung cancer, ovarian cancer, thyroid cancer, endometrial cancer, omental cancer, testicular cancer, and liver cancer.

53. The method of claim 50, wherein the cancer is lung cancer.

54. The method of claim 50 wherein the level of bone morphogenetic protein-2 is measured by an immunoassay.

55. The method of claim 54 wherein the immunoassay is selected from the group consisting of Enzyme Linked Immunosorbent Assay (ELISA), Western blot, immunoprecipitation, in situ immunohistochemistry, and immunofluorescence.

56. The method of claim 50 wherein the assay used to measure the level of bone morphogenetic protein-2 is Enzyme-Linked Immunosorbent Assay (ELISA).

57. The method of claim 50, wherein the biological sample is selected from a group consisting of blood, blood serum, urine, sputum, synovial fluid, ascites, and tissue.

58. The method of claim 50 wherein the biological sample is blood serum.

59. A method for the diagnosis of cancer in a patient, which method comprises detecting the overexpression of bone morphogenetic protein-2 in the patient, the overexpression of bone morphogenetic protein-2 indicating the presence of cancer, the method comprising the steps of:

(i) quantifying *in vivo* or *in vitro* the presence of bone morphogenetic protein-2 in a patient or a biological sample obtained from a patient;

(ii) comparing the result obtained in step (i) to that of a normal, non-cancerous patient; and

(iii) diagnosing for the presence of cancer based on an increased level of bone morphogenetic protein-2 in step (ii) relative to a normal, non-cancerous patient.

60. The method of claim 59 wherein the cancer is a carcinoma.

61. The method of claim 60 wherein the carcinoma is selected from the group consisting of bladder cancer, breast cancer, colon cancer, kidney cancer, lung cancer, ovarian cancer, thyroid cancer, endometrial cancer, omental cancer, testicular cancer, and liver cancer.

62. The method of claim 59 wherein the cancer is lung cancer.

63. The method of claim 59 wherein bone morphogenetic protein-2 is quantified by an immunoassay.

64. The method of claim 59 wherein the bone morphogenetic protein-2 is quantified by Enzyme-Linked Immunosorbent Assay (ELISA).